

Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (CURRENTLY AMENDED) An image processing device for generating a 3-D model image of a target object included in an input image, comprising:

a face image input means for inputting a face image;

a 3-D model input means for inputting one or a plurality of 3-D models for each of a plurality of parts;

a 3-D model selection means for selecting a 3-D model for an arbitrary part of the plurality of parts based on an instruction input by an operator;

a face image mapping means for mapping the face image input via the face image input means to the 3-D model selected by the 3-D model selection means and for displaying the mapped 3-D model; and

an image generation means for generating a 3-D still image of the target object using the 3-D model selected by the 3-D model selection means and the face image input by the face image input means.

2. (ORIGINAL) An image processing device according to claim 1, wherein the 3-D model has information on a motion on a time series of one or all of the plurality of parts; and the image generation means generates a 3-D moving image using the 3-D model selected by the 3-D model selection means and the face image input by the face image input means.

3. (ORIGINAL) An image processing device according to claim 1, wherein the plurality of parts include a part corresponding to a trunk, a part corresponding to a face, and a part corresponding to a head.

4. (CURRENTLY AMENDED) An image processing device according to claim 1, wherein when the 3-D model selection means changes a 3-D model of a first part, the 3-D model selection means changes a 3-D model of a second part to a 3-D model of a second part that is in association with the changing of the changed 3-D model of the first part.

5. (CANCELED)

6. (CANCELED)

7. (CURRENTLY AMENDED) An image processing device according to claim 1, further comprising:

a face image categorization means for categorizing a face image input via the face image input means; and

a face model selection means for automatically selecting a 3-D model of a part corresponding to a face ~~based on responsive to~~ a result of the categorization by the face image categorization means,

wherein the face image mapping means maps the face image input via the face image input means to the 3-D model of the part corresponding to a face selected via the face model selection means.

8. (ORIGINAL) An image processing device according to claim 1, further comprising:
a face image categorization means for categorizing a face image input via the face image input means; and

a head model selection means for automatically selecting a 3-D model of a part corresponding to a head based on a result of the categorization by the face image categorization means,

wherein the face image mapping means maps the face image input via the face image input means to the 3-D model of the part corresponding to a head selected via the head model selection means.

9. (ORIGINAL) An image processing method for generating a 3-D model image of a target object included in an input image, comprising the steps of:

inputting a face image via a face image input means;

inputting one or a plurality of 3-D models for each of a plurality of parts via a 3-D model input means;

selecting a 3-D model for an arbitrary part of the plurality of parts based on an instruction input by an operator;

mapping the face image input to the selected 3-D model and displaying the mapped 3-D model on a display means; and

generating a 3-D still or moving image of ~~the target object~~ using the selected 3-D model and the input face image.

10. (ORIGINAL) An image processing method for generating a 3-D model image of a target object included in an input image, comprising the steps of:

inputting a face image via a face image input means;

categorizing the input face image;

inputting one or a plurality of 3-D models for each of a plurality of parts via a 3-D model input means;

automatically selecting a 3-D model of an input arbitrary part based on a result of the categorization by the face image categorization step;

mapping the face image input to the automatically selected 3-D model and displaying the mapped 3-D model on a display means; and

generating a 3-D still or moving image using the automatically selected 3-D model and the input face image.

11. (ORIGINAL) A computer-readable recording medium storing an image processing program for generating a 3-D model image of a target object included in an input image, the program comprising the steps of:

inputting a face image via a face image input means;

inputting one or a plurality of 3-D models for each of a plurality of parts via a 3-D model input means;

selecting a 3-D model for an arbitrary part of the plurality of parts based on an instruction input by an operator;

mapping the face image input to the selected 3-D model and displaying the mapped 3-D model on a display means; and

generating a 3-D still or moving image using the selected 3-D model and the input face image.

12. (ORIGINAL) A computer-readable recording medium storing an image processing program for generating a 3-D model image of a target object included in an input image, the program comprising the steps of:

inputting a face image via a face image input means;

categorizing the input face image;

inputting one or a plurality of 3-D models for each of a plurality of parts via a 3-D model input means;

automatically selecting a 3-D model of an input arbitrary part based on a result of the categorization by the face image categorization step;

mapping the face image input to the automatically selected 3-D model and displaying the mapped 3-D model on a display means; and

generating a 3-D still or moving image using the automatically selected 3-D model and the input face image.

13. (CURRENTLY ADDED) An image processing device for generating a 3-D model image of a target object included in an input image, comprising:

a face image input means for inputting a face image;

a 3-D model input means for inputting one or a plurality of 3-D models for each of a plurality of parts;

a 3-D model selection means for selecting a 3-D model for an arbitrary part of the plurality of parts based on an instruction input by an operator;

a face image mapping means for mapping the face image input via the face image input means to the 3-D model selected by the 3-D model selection means and for displaying the mapped 3-D model;

an image generation means for generating a 3-D still image ~~of the target object~~ using the 3-D model selected by the 3-D model selection means and the face image input by the face image input means;

wherein when the 3-D model selection means changes a 3-D model of a first part, the 3-D model selection means changes a 3-D model of a second part in association with the changing of the 3-D model of the first part; and

wherein when a first 3-D model of a first part and a second 3-D model of a second part corresponding to the first part are selected, the 3-D model selection means stores a combination of the first and second parts and the first and second 3-D models; and when an arbitrary 3-D model of the first part is changed to the first 3-D model, the 3-D model selection means changes a 3-D model of the second part to the second 3-D model.

14. (CURRENTLY ADDED) An image processing device for generating a 3-D model image of a target object included in an input image, comprising:

a face image input means for inputting a face image;

a 3-D model input means for inputting one or a plurality of 3-D models for each of a plurality of parts;

a 3-D model selection means for selecting a 3-D model for an arbitrary part of the plurality of parts based on an instruction input by an operator;

a face image mapping means for mapping the face image input via the face image input means to the 3-D model selected by the 3-D model selection means and for displaying the mapped 3-D model;

an image generation means for generating a 3-D still image ~~of the target object~~ using the 3-D model selected by the 3-D model selection means and the face image input by the face image input means;

wherein when the 3-D model selection means changes a 3-D model of a first part, the 3-D model selection means changes a 3-D model of a second part in association with the changing of the 3-D model of the first part; and

wherein when a specific type first 3-D model of a first part is selected, a second 3-D model of a second part corresponding to a third 3-D model of the first part prior to the selection is stored by the 3-D model selection means; and when the specific type first 3-D model of the first part is changed to a 3-D model not being of the specific type of the first part, the 3-D model selection means changes a 3-D model of the second part to the stored second 3-D model.

15. (CURRENTLY ADDED) An image processing method for generating a 3-D model image of a target object according to claim 9, wherein said selecting includes selecting a 3-D model of a first part and selecting a 3-D model for a second part and wherein said image processing method further comprises the step of:

changing the 3-D model of the first part that was previously selected and the 3-D model of the second that was first part previously selected;

wherein said changing includes changing the previously selected 3-D model of a first part to another 3-D model of the first part and changing the previously selected 3-D model of a second part

to another 3-D model of the second part, where the another 3-D model of the second part is associated with the another 3-D model of the first part.

16. (CURRENTLY ADDED) An image processing method for generating a 3-D model image of a target object included in an input image according to claim 9, wherein said selecting includes selecting a first 3-D model of a first part and selecting a second 3-D model for a second part and wherein said image processing method further comprises the steps of:

storing a combination of the first and second parts and the first and second 3-D models;
changing the first 3-D model that was previously selected to another first 3-D model of the first part, responsive to another instruction input by the operator; and

changing the second 3-D model that was first part previously selected to another second 3-D model that is associated with the another first 3-D model, responsive to the changing of the first 3-D model to the another first 3-D model.

17. (CURRENTLY ADDED) An image processing method for generating a 3-D model image of a target object included in an input image according to claim 16, wherein said changing of the second 3-D model is accomplished automatically responsive to the changing of the first 3-D model to the another first 3-D model.

Applicant: Y. Nagai, et al.
U.S.S.N.: 09/680,904
RESPONSE TO OFFICE ACTION
Page 12 of 27

18. (ORIGINAL) An image processing device according to claim 7, further comprising a head model selection means for automatically selecting a 3-D model of a head responsive to the result of the categorization by the face image categorization means.